Edition 2a

ODM1818

18:18 DVI Matrix Routers

USER MANUAL

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CHAPTER 1. INTRODUCTION AND INSTALLATION

The ODM1818, 18X18 DVI Matrix Router is a high speed cross switcher of 18 DVI inputs and 18 DVI outputs. Having a ruggedized metallic enclosure, the ODM1818 gives applicability to harsh environments. The key features are;

- Eighteen (18) DVI single-link inputs and output
- Up to WUXGA (1,900x1,200) pixel resolution at 60Hz refresh ratio, having 1.65Gbps transmission bandwidth
- EDID management – flexible adaptation to power management of overall systems
    - ✧ Direct readout from connected displays
    - ✧ Preset to input ports
- Long distance extension of DVI input and output by Optical DVI cables or modules
- Reclocking of R,G,B of DVI inputs and outputs
- Various Control Interfaces;
    - ✧ Front panel key input
    - ✧ Commands input through RS232, LAN, and USB
    - ✧ Graphic user interface over Ethernet
    - ✧ Graphic user interface using Proprietary PC software in the shipping group
- Hierarchical connection of multiple ODM1818 up to 3 levels to widen the number of display connection or source connection
- DIP switch setting for differentiating multiple use of DS-1818M II over RS232 connection
- IP setting for Ethernet – point-to-point and local network control

The shipping group consists of the followings;

- Hard plastic case to carry: 1 set
- Mainframe of ODM1818: 1 set
- AC/DC power adaptor (12V/10A, AC110V-240V): 1 set
- AC power cord: 1 set
- User Manual: 1 set
- CD storing PC control software: 1 set
- A plug – B plug USB cable: 0.5m
- Firmware download cable: 1 set
- RS-232 cable: 1set

1.1 Notices for Safe Usage

- If the equipment is used in a manner not specified by the manufacture, it might be impaired in inability of recovery.
- Use the assigned power cord or power adaptor in the shipping group.
- Connect the power cord to the normal and safe outlet.
- Keep the unit away from the liquid, magnetic and combustible substances.
- Do not place heavy weights on the unit.
- Move away from noisy environments like vibration or impact.
- Do not install the unit vertically.
- Do not disassemble the unit by user's own discretion.
- When any malfunction or breakdown occurs, contact us promptly.

1.2 Physical Description

The ODM1818 is mountable on 19” standard rack with brockets. On front panel are some function keys, input-output buttons and a status display window placed as shown in Figure 1-1.

- CONTROL keys: ①
  - ✧ **Create** - Start updating or configuring input-output setup
  - ✧ **Preview** - Show current status of input-output configuration
  - ✧ **Cancel** – Destruct all outputs configured with a input or Reject any key inputs
  - ✧ **Enter** - Accept key inputs and complete configuring input-output setup
  - ✧ **Function** - Configure IP for Ethernet, set baud rate for RS232 and set EDID:
- Input-output Buttons:
  - ✧ Eighteen (18) illuminated LED type buttons for input: ②
  - ✧ Eighteen (18)) illuminated LED type buttons for output: ③
- Status window display - display the control status in 20x4 text mode: ④
- Power ON/OFF button: ⑤
- Reset button – Restart: Push with a needle pen ⑥

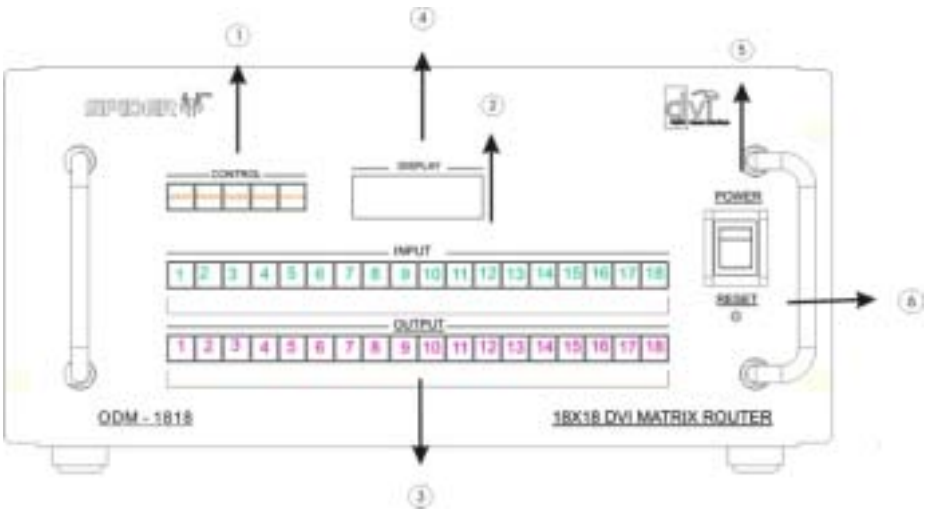


Figure 1-1 Front Panel of ODM1818

All input, output, interface and power connections are placed on the rear panel and are featured as follows;

- Eighteen (18) single link DVI inputs - female type: ①
- Eighteen (18) single link DVI outputs - female type: ②
- DIP switch - 8 bits to set identifier in case of multiple connection of ODM1818: ③
- USB B type receptacle port: ④
- RS 232 Serial port - selectable of baud rates: ⑤
- 10/100 Base Ethernet Port: ⑥
- Download Port - firmware download: ⑦
- DC power receptacle: ⑧

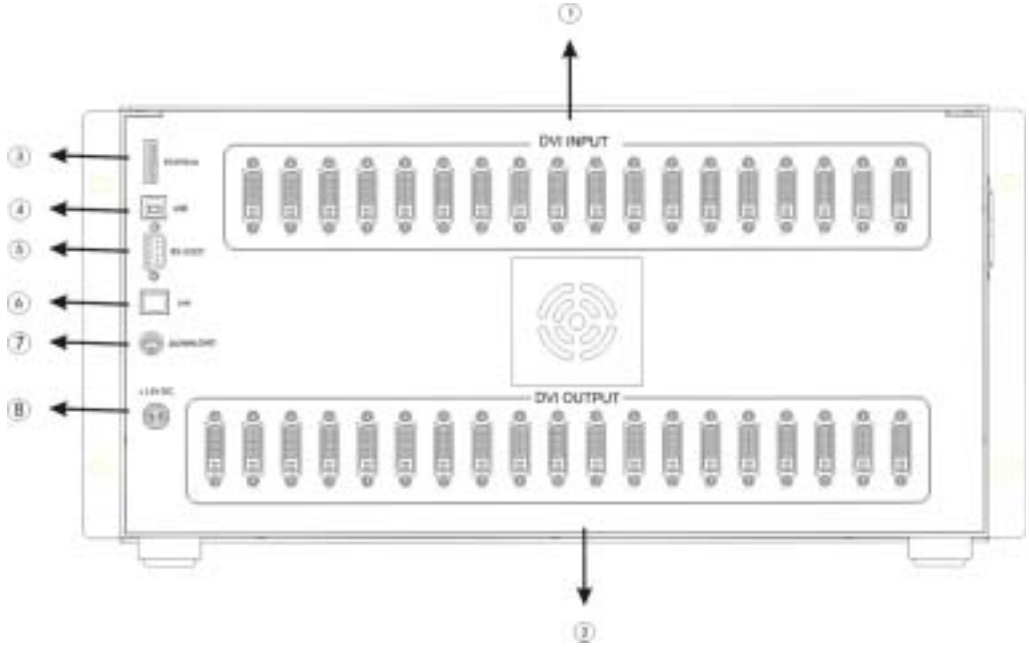


Figure 1-2 Rear Panel of ODM1818

1.3 EDID Control and Configuration

EDID (Extended Display Identification Data) is a data structure provided by a display to describe its capabilities to a graphic card. It is what enables a PC to know what kind of monitor is connected. It includes manufacturer name, product type, phosphor or filter type, timings supported by the display, display size, luminance data and (for digital displays only) pixel mapping data. Once the graphic source reads it out (usually done in booting PC), the EDID helps it know information of best-fit data format for a connected monitor.
Besides of configuration of inputs and outputs, the ODM1818 supports EDID configuration to store any wanted EDIDs to an EEPROM of each input by front key control, command codes and web control panel setting. The ODM1818 gives two choices for EDID setting out of fixed factory EDID and direct readout-store EDID of any targeted display. The factory default setting is UXGA (1,600x1,200) at 60Hz for all inputs.

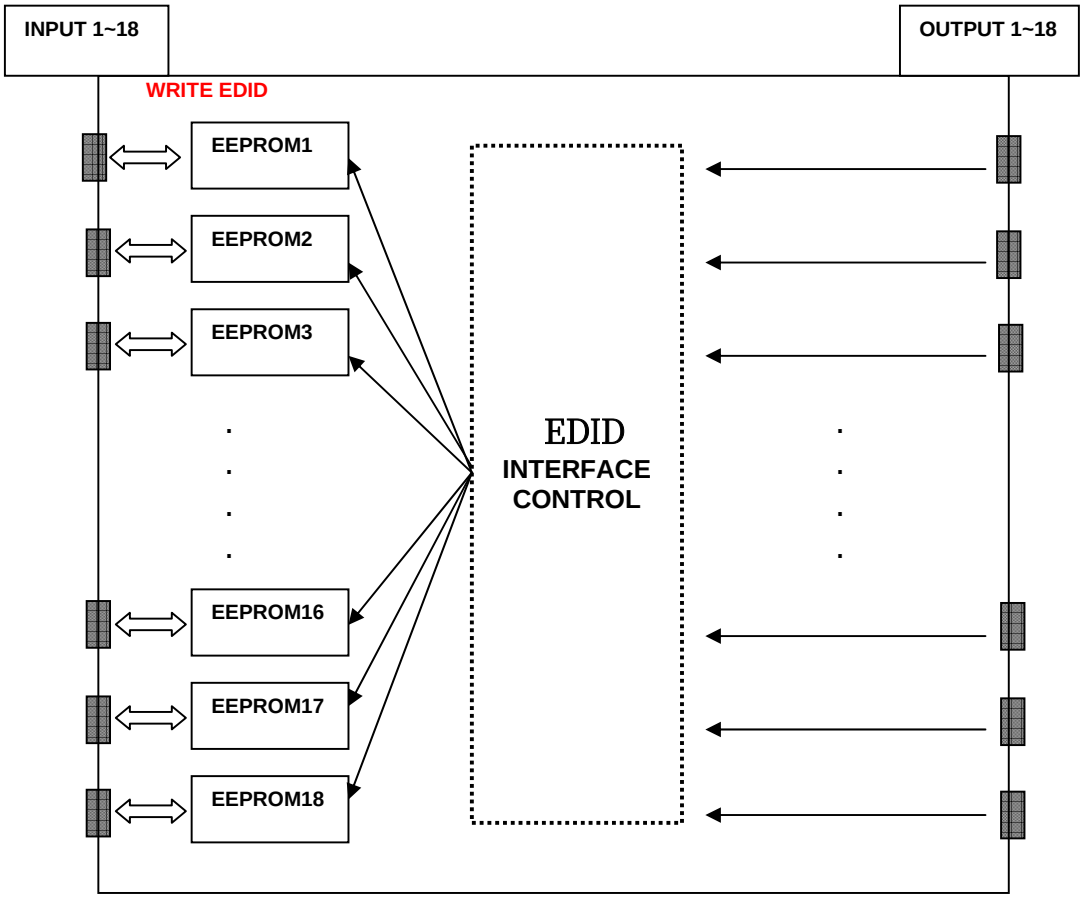


Figure 1-3 Concept drawing of EDID setting and working in ODM1818

As shown in the concept drawing, once you do EDID configuration, then each EDID is stored in EEPROM at the front of DVI input and the video sources could read out each EDID in the EEPROM. The beauty of working is that the video sources enable to start reading EDID in boot-up even though the ODM1818 and connected displays are not powered on yet.

Connection of Optical DVI cables and modules for long distance extension

The ODM1818 supports connection of Optical DVI cables or modules to the inputs and outputs.
We strongly recommend not using copper DVI cables over 3 m (10ft) extension, but using fiber-optic DVI products.

Initializing ODM1818 and Installation Guide

INITIALIZATION

Plug a adequate AC power cord in the shipping group to the AC/DC power adaptor and plug the DC cord to the +12VDC connector on the rear panel while caring the arrow mark on the connector of the DC cord. Push **POWER** button on the front panel then you could see;

Red LED lit on the button and Initializing … 18X18 DVI Matrix on the display window and sweeping Green and Red lights on the Input and Output buttons respectively. Finally shows **USER MODE** on the display window, which means being ready to accept commands.

RACK MOUNTING

Before installing cables, the ODM1818 has to be mounted on the rack. On both front faces of the side chassis are two holes tapped to screw L-shape plates to the rack.

CONTROL CONNECTIONS

Commands and functions of the ODM1818 are accomplished through the RS-232C and Ethernet connection. USB interconnection is valid only with Proprietary Windows PC software on CD in the shipping group.

RS-232C Control

Connect the ODM1818 to a video controller or PC with a RS-232C cable having D-sub 9 pin males' connectors.

Ethernet Control

Connect the ODM1818 to a video controller or PC with a cable having RJ 45 connectors.

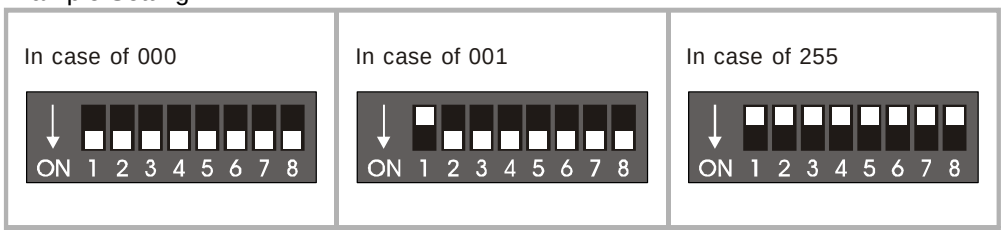
- Direct connection of PC or video controller to the ODM1818: Use an Ethernet cros-sover cable.
  - ✧ The PC which is connected to the network is typically configured to have a dynamic IP address by a network DHCP server. If the PC connects directly to the ODM1818, the server in your network is not available for making ad-dressing the PC.
  - ✧ The PC should be manually set in a static IP address. Refer to the Setting the PC IP address on page 14.
- LAN connection of the ODM1818: Use a straight Ethernet cable.
  - ✧ The ODM1818 is configured at the factory with the default IP address, **192.168.0.88**. Before connecting to your network, verify if it is valid on the network.
  - ✧ The IP address can be reconfigured by front key buttons or command lines over RS 232, Ethernet and USB.

CHAPTER 2 COMMUNICATIONS SETUP

2.1 Setting Router ID of ODM1818

If you have multiple routers of ODM1818 with a video controller or PC for control, at first each ODM1818 should be identified with DIP switch setting, located on the rear panel marked in Router ID. They are consisted of 8 digits**, representing One (1) at the up position and Zero (0) at the down position**, being able to set in a range of 000 to 255. The factory default setting is **255.**

Example Setting



All command codes are required to have the router ID in its header. For more details, refer to the command codes instruction in Chap. 3.2.

2.2 Front Panel Interface

Without connection of any Video controller or control PC, all communications with the ODM1818 are able to work with the front key inputs.

Notice that **CREATE**, **PREVIEW** and **CANCEL** of control keys are toggled in Activate and Deactivate modes. The **ENTER** functions accept and select and save pre-activities. The **FUNCTION** key has setting of several features and each push shows each feature in a sequential iterating mode. In Function mode, pushing **ENTER** means saving the setting whatever you change or not. But, pushing other control buttons makes escape from the **FUNCTION** mode. Before starting keying, make sure that the display window shows **USER MODE**.

2.2.1 CREATE Mode

It enables to configure connection of inputs and outputs to be cross-switched as you wish.

At first, push **CREATE** button to make it activate in Red lit, and then you could see the current configuration on the display window. Following it, push one of any input buttons to make it activate in Green light and then you can see lighting in Red on currently configured outputs and at the same time can see the configuration on the display window.

Select single or multiple outputs of any output buttons to make them lit in Red. Output buttons are toggled in ON (selected) or OFF (reject).To complete configuring outputs for an input, push **ENTER** and then save the setting and return to the **User Mode**.

Sequentially push another input button and match any outputs for the input until all inputs are configured. Pushing any of **CREATE**, **PREVIEW** or **CANCEL** shows the current configuration of in-out match.

2.2.2 PREVIEW Mode

It shows configuration of in-out match. The **PREVIEW** button is toggled. Push the button to light in Orange and shows the in-out connection diagram on the display window. While keeping in Red lit, push any input button and then light connected outputs in Red for the input lit in Green. If pushing **ENTER** button, swing lights of output buttons for each input sequentially.

During the swing light, the mode is changed by user mode when users push the Cancel key.

2.2.3 CANCEL Mode

It enables cancel the configuration of outputs for each input. Push **CANCEL** button and then show the current configuration on the display window. Now, push an input button to be canceled and then light the selected input in Green and its configured outputs in Red. Pushing **ENTER** button makes complete the process.

2.2.4 FUNCTION Mode

Function operation

Move the step of Menu by control **Create** & **Function** key

Flow chart as follows;

18 : 18 = Monitoring -> IP Setting -> Subnet Mask Setting -> Gate way Setting -> Baud rate Setting -> Command Type -> Edid Save Setting -> Factory Setting

Edited data will be store at each mode using by Preview key. (Except monitoring)
To complete the process, press the enter key for saving & renew the data.

SELECT ONE OF INPUTS FOR MONITORING

This process is not a must, but your option in case of making sure a video source. At first, connect a display to the MONITORING port and any video sources to the inputs on the rear panel.

Push the **Create** & **Function** key for select the monitoring mode, then the display window on the front panel shows;

(Notice) This matrix does not store the connection data on DB. User can use the monitoring function at the Monitoring Mode. Connection will be disconnect when user change another function mode or user mode.

◀ MONITOR MODE ▶

Input Channel :

You could push any input buttons to be monitored among eighteen (18) input keys. Push **ENTER** button to finish the process.

SETTING FOR COMMUNICATION MODE

IP ADDRESS

Select the mode for IP ADDRESS using Create & Function key.

Input 17 and 18 buttons make the Under Bar move to left and right, respectively.

NUMBER 0 : INPUT 10

NUMBER 1 ~ 9 : INPUT 1 ~ 9

◀ NETWORK INFO ▶

Local IP:

C : 192. 168. 000. 088.

E : 192. 168. 000. 088.

192. 168. 000. 088 is preset in factory. Pressing **PREVIEW** button store as a temporary and then finishes the process and back to the user mode by push the **ENTER** button.

SUBNET MASK

Select the mode for SUBNET MASK using Create & Function key.

NUMBER 0 : INPUT 10

NUMBER 1 ~ 9 : INPUT 1 ~ 9

Input 17 and 18 buttons make the Under Bar move to left and right, respectively.

◀ NETWORK INFO ▶

Subnet Mask:

C : 255. 255. 255. 000.

E : 255. 255. 255. 000.

255. 255. 255. 000 is preset in factory. . Pressing **PREVIEW** button store as a temporary and then finishes the process and back to the user mode by push the **ENTER** button.

GATEWAY

Select the mode for SUBNET MASK using Create & Function key.

NUMBER 0 : INPUT 10

NUMBER 1 ~ 9 : INPUT 1 ~ 9

Input 17 and 18 buttons make the Under Bar move to left and right, respectively.

◀ NETWORK INFO ▶

Gateway:

C : 192. 168. 000. 001.

E : 192. 168. 000. 001.

192.168.000.001 is preset in factory. Pressing **PREVIEW** button store as a temporary and then finishes the process and back to the user mode by push the **ENTER** button.

MAC ADDRESS

Select the mode for MAC ADDRESS using Create & Function key.

NUMBER 0 : INPUT 10

NUMBER 1 ~ 9 : INPUT 1 ~ 9

ASCII CHARACTOR A ~ F : INPUT 11 ~ 16

Input 17 and 18 buttons make the Under Bar move to left and right, respectively.

◀ NETWORK INFO ▶

Mac Address:

C : 00. AA. BB. CC. DD. EE.

E : 00. AA. BB. CC. DD. EE.

00. AA. BB. CC. DD. EE is preset in factory. Pressing **PREVIEW** button store as a temporary and then finishes the process and back to the user mode by push the **ENTER** button.

Port Number

Select the mode for PORT NUMBER using Create & Function key.

NUMBER 0 : INPUT 10

NUMBER 1 ~ 9 : INPUT 1 ~ 9

Input 17 and 18 buttons make the Under Bar move to left and right, respectively.

◀ NETWORK INFO ▶

UDP Port :

C : 03000

E : 03000

03000 is preset in factory. Pressing **PREVIEW** button store as a temporary and then finishes the process and back to the user mode by push the **ENTER** button.

RS 232C BAUD RATE

Select the mode for RS 232C BAUD RATE using Create & Function key.

NUMBER 1 ~ 4 : INPUT 1 ~ 4

◀ Set Baud rate ▶

Entry(1,2,3,4) : 1

C : BAUD RATE 19200

E : BAUD RATE 19200

19200 bps is highly recommended to set. **PREVIEW** button store as a temporary and then finishes the process and back to the user mode by push the **ENTER** button.

SETTING COMMAND TYPE –

Select the mode for SETTING COMMAND TYPE using Create & Function key.

NUMBER 1 ~ 3 : INPUT 1 ~ 3

COMMAND TYPE :

1. ODM1818 (RT CODE)

2. ODM1818 (DATA LENGTH 2BYTE OLD TYPE CODE)

3. ODM1818 (DATA LENGTH 3BYTE NEW TYPE CODE)

◀ Command Type ▶

Entry(1,2,3,4) : 1

C : ODM1818 SE Type

E : ODM1818 SE Type

ODM1818 is preset in factory.

PREVIEW button store as a temporary and then finishes the process and back to the user mode by push the **ENTER** button.

SETTING EDID AT INPUTS

Select the mode for BAUD RATE TYPE using Create & Function key

NUMBER 1 ~ 18 : OUTPUT 1 ~ 18

Page Move : INPUT 15, 16

Cursor move : INPUT 17, 18

Other Channel status : Using Page move key (Each page show the status of **6** channel)

EDID control : Page key and cursor key make the under bar move to Edit window (Input & Output)

After move that push the Output channel.

	◀				E	D	I	D			S	A	V	E				▶	
I	:	0	1		0	2		0	3		0	4		0	5		0	6	
O	:	P	R		P	R		P	R		P	R		P	R		P	R	

Saving the data using by key of PREVIEW. Push **ENTER** button to finish the process.

FACTORY MODE

Select the Factory mode by control Create & Function key

You can choose operate Factory mode or not with pop-up.

You have to press ‘Enter’ key again after press ‘Input 1’ key to operate Factory Mode.

Since operate Factory Mode, all parameters will removed and reset to the factory out setting.

It will move to User Mode after finish Factory Mode operation.

You can move to User Mode directly without Factory Mode operation by press ‘Enter’ key

after press ‘Input 1’ key.

2.3 Serial Communication

2.3.1 Launching HyperTerminal Window

The ODM1818 provides a command line interface being executed through the serial port, RS-232C.

Consider a PC running the Microsoft Windows operating system as a controller for ODM1818. The PC is provided with serial emulation software so called as HyperTerminal. ODM1818 supports communication with this software in an efficient way.

Take the following procedure to make connection of a HyperTerminal window on PC ready.

1. Connect the ODM1818 to a PC as described in section RS-232C Control on page 16
2. Click **Start > Programs > Accessories > Communications > HyperTerminal** to make executed.

Figure 2-1 HyperTerminal Access

Running a HyperTerminal displays the **Connection Description Dialog**, as shown below.

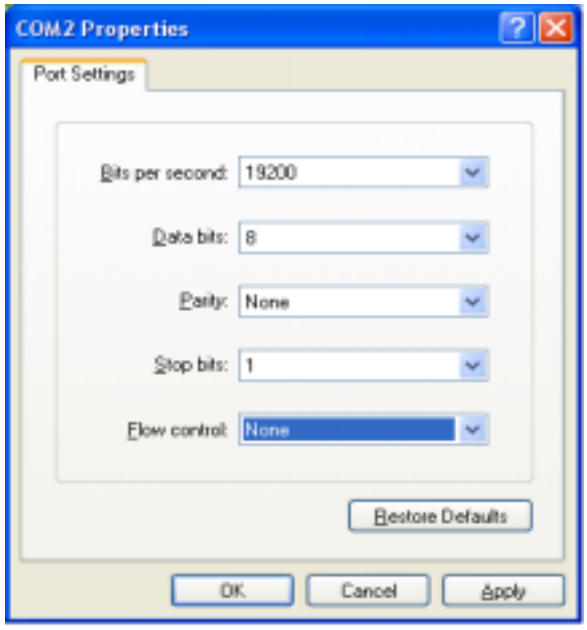


Figure 2-2 Connection Description Dialog

3. In the dialog, enter a name and choose an icon. Clicking OK displays the **Connect To** dialog box.

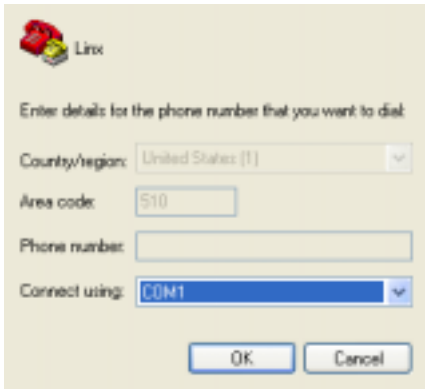


Figure 2-3 Connect To Dialog

4. In the **Connect To** dialog box, ignore the **Country, Area Code** and **Phone Number** fields. In the **Connect Using** field, choose the available COM port to which the serial cable from

ODM1818 is connected.

5. Click **OK** to show the **COM Properties** dialog box.

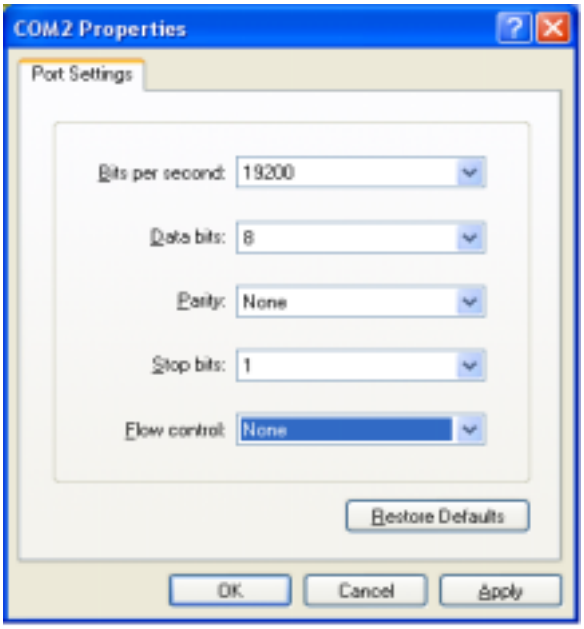


Figure 2-4 COM Properties Dialog

6. Configure the PC to the DS-1818M II default settings as follows;
   - ✧ Bits per second (baud rate): **19200** (recommended) or others
   - ✧ Data bits: **8**
   - ✧ Parity: **None**
   - ✧ Stop bits: **1**
7. Click OK to display the HyperTerminal window.
8. Make sure that the communication of ODM1818 is ready by pressing **ENTER**.
9. Send command set. (Refer to Chap. 3.2)

2.3.2 Telnet

Telnet is a user command and an underlying TCP/IP protocol for accessing remote computers. Through Telnet, an administrator or another user can access someone else's computer remotely. On the Web, HTTP and FTP protocols allow you to request specific files from remote computers, but not to actually be logged on as a user of that computer. With Telnet, you log on as a regular user with whatever privileges you may have been granted to the specific application and data on that computer.

LAUNCHING TELNET SESSION

With the IP address of the PC set above, a Telnet session can be started.

1. From the PC **Start** menu, select **Run**.
2. 2. In the **Open** dialog box, type **command** as shown below.

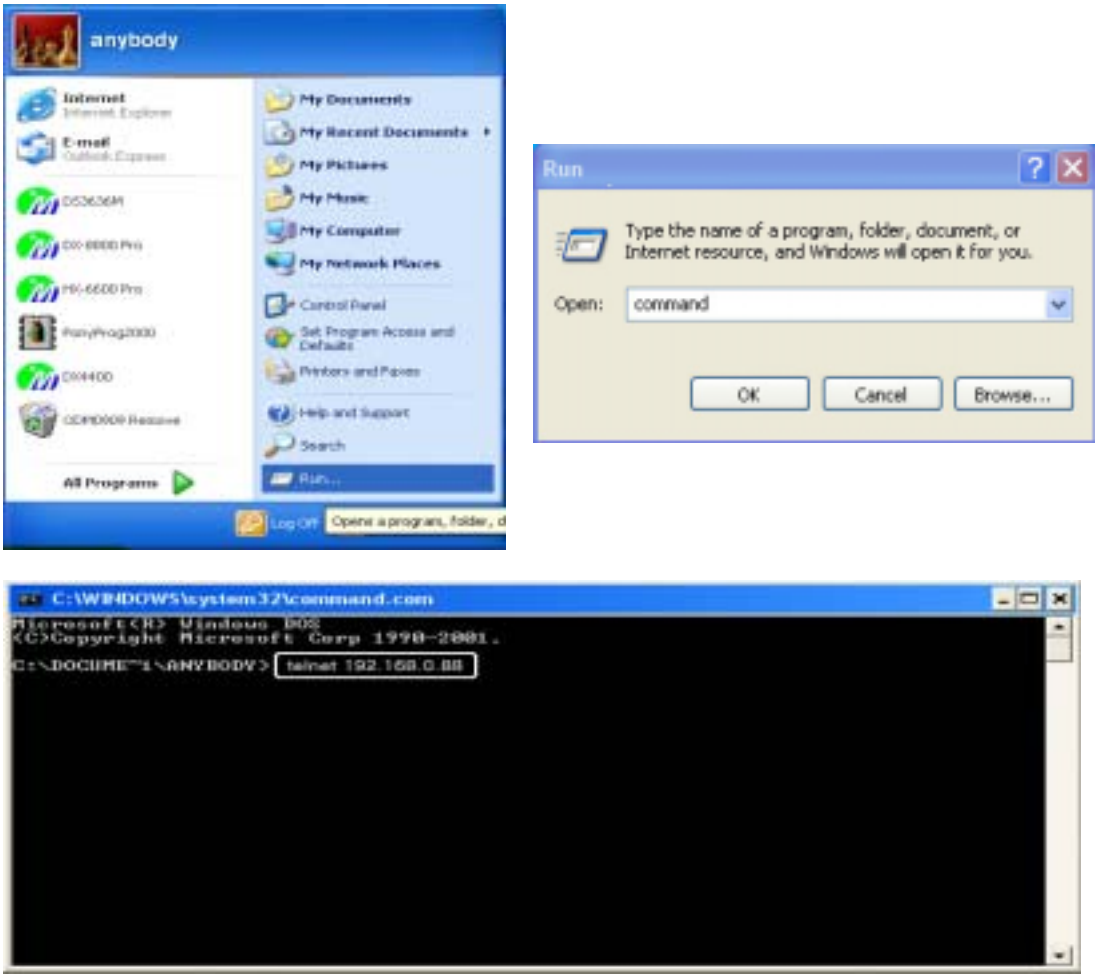


Figure 2-6 Run Window

3. Click **OK** to open the Windows command window.
4. At the prompt in the command window, type:

   telnet <ip_address> 8000

   where <ip_address> stands for the IP address of the ODM1818.

   For example, if it keeps the default IP, type as follows;

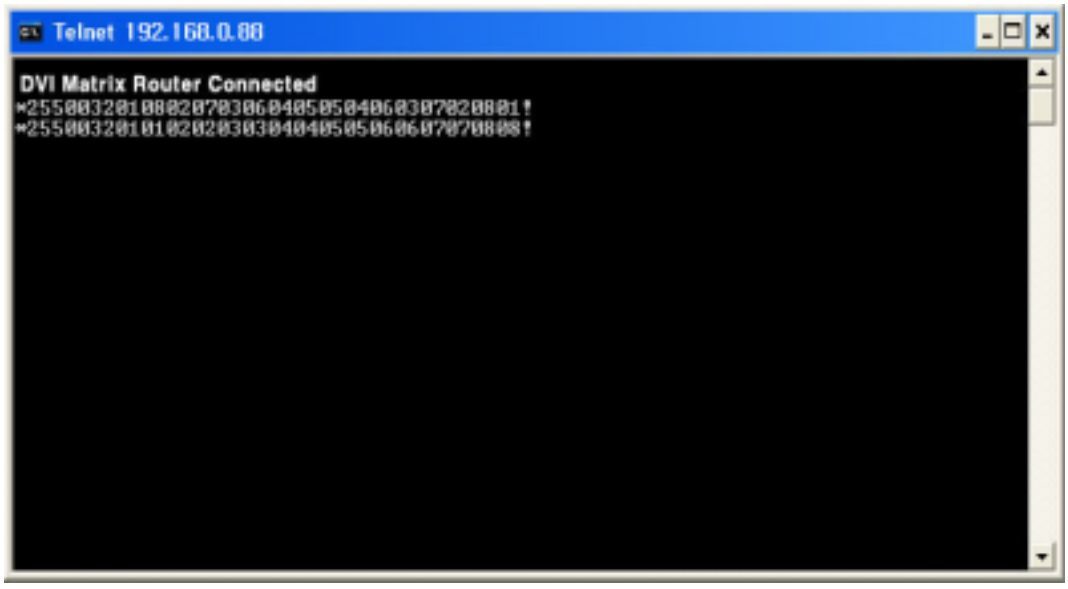


Figure 2-7 Telnet connected

2.4 Ethernet Control

The ODM1818 can be controlled through the 10/100 base Ethernet port using either graphic user interfaces or a command line interface. The graphic user interfaces use both of a standard web browser such as Microsoft Internet Explorer and a proprietary PC software. The physical connection of ODM1818 can be made on the standard LAN or directly in the peer-to-peer way. The command line interface uses a Telnet session to a private port.

To make ODM1818 connect through the Ethernet port, it should be set to have a unique, static IP address. The default IP from factory is **192.168.000.088**. To acquire a valid IP in your LAN network, contact your network manager to avoid IP conflict. If change of the default is required, refer to Changing the ODM1818 Matrix Router IP Address in Chap. 2.2.4 for instruction.

SETTING THE PC IP ADDRESS

If PC is directly connected to the ODM1818 through the 10/100 Base Ethernet port, a static address should be configured in PC. Following instruction shows how to assign it;

1. Use an Ethernet crossover cable or hub to connect directly between the Ethernet port of the ODM1818 and that of a PC.
2. From the PC **Start** menu, select **Control Panel**.
3. In the **Control Panel**, select **Network Connections**.
4. In the **Network Connections**, make a right click on **Local Area Connection** and select **Properties** tab. The **Local Area Connection Properties** window is shown as follows;

Figure 2-5 Local Area Network Properties Window

5. Scroll and select **Internet Protocol (TCP/IP)** and click on **Properties**.
6. In the **Internet Protocol (TCP/IP) Properties**, click the **Use the following IP address** radio button.
7. Enter an IP address being compatible with the current IP address of the ODM1818. For example, in case of factory default IP, 192.168.000.088, the PC IP address should be chosen as 192.168.000.nnn, where nnn ranges 000 to 255 except 088.

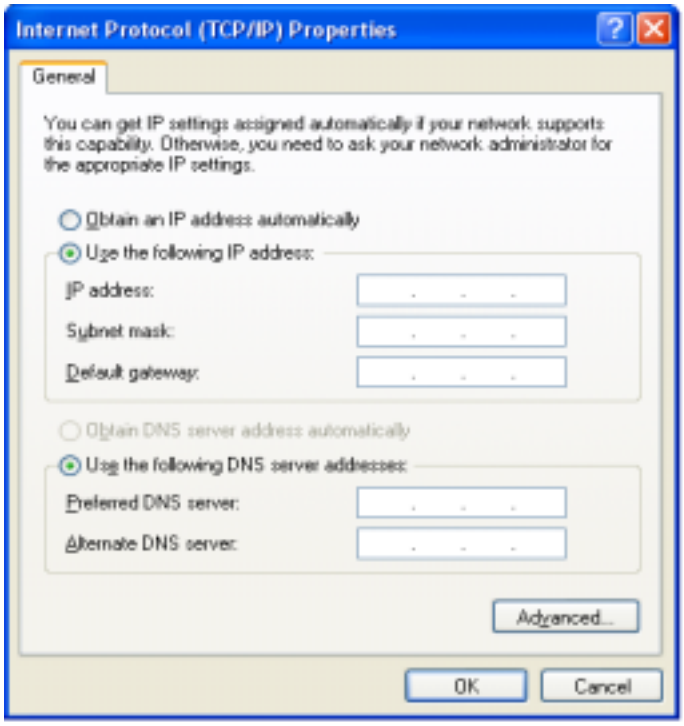

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 2-6 Setting an PC IP address

8. Close all windows opened during this procedure.

2.5 USB CONTROL

The control of ODM1818 through USB connection is only valid with the proprietary PC software, but not with command line interface. For its device installation and instruction to use, refer to the Proprietary PC Software Operation in Chap. 3.4.

CHAPTER 3 OPERATIONS

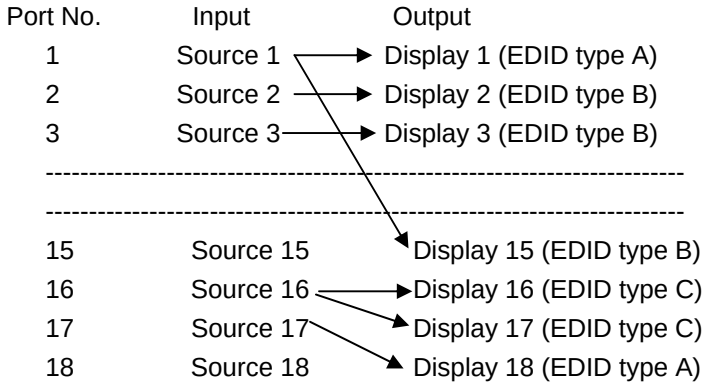
The ODM1818 could be operated in various interfaces, Front Panel Key Inputs, communicating with command lines, graphic interfaces on web control panel (WCP) and proprietary PC software through RS 232C, Ethernet, or USB. All functions are executed in a basis of command line interface, but graphic interfaces on the WCP or the PC software make more efficient to operate the ODM1818.

Firmware and PC software are managed according to versions in release or upgrades and are shown how to upgrade in the firmware and software management in Appendix B.

3.1 Front Panel Operations

Refer to Chap. 2.2, for the details front keys function. To show how to operate, examples for some cases are explained below;

For example, if you have eighteen displays with three different types of EDID to be set and want to configure connection of inputs and outputs like below;



The input-output configuration drawing arrows represents connecting as below;

Input 1 to Output 1 and 15,
Input 2 to Output 2,
Input 3 to Output 3,
Input 4 to Output 5,
Input 15 no connection
Input 16 to Outputs 16 and 17,
Input 17 to Output 18, and
Input 18 no connection

Operation has to be executed in two steps. The first is EDID setting, which has each EDID data of

displays stored into EEPROM at each input front as configured in the above. The last is Input-Output Configuring, to make cross-switch as configured in the above.

1. For the first step of EDID setting, selecting the mode for EDID SAVE mode using Create & Cancel key until displaying EDID save in the front LCD window.

	◀				E	D	I	D			S	A	V	E				▶	
I	:	0	1		0	2		0	3		0	4		0	5		0	6	
O	:	P	R		P	R		P	R		P	R		P	R		P	R	

2. Set the configuration as shown in below;

	◀				E	D	I	D			S	A	V	E				▶	
I	:	0	1		0	2		0	3		0	4		0	5		0	6	
O	:	0	5		1	6		1	7		0	9		0	1		P	R	

Note if input has no output connection, EDID will not save. (PR is displayed)
Note that in case that a source connects two or more different displays, you should select only one EDID to work for your configuration.

3. Push **ENTER** key to make the process complete.
4. Confirm the message to successfully execute storing the EDID as configured;

Note that the stored EDID setting keeps until re-taking the EDID setting process, even though the ODM1818 is powered on and off repeatedly.

5. For the last step, input-output configuring, push **CREATE** key to display the existing input-output configuration below;

◀ Create Mode ▶

Input Channel :

6. Push the input **1** numeric key to make it turned in Green and then see the below in the LCD

window;

◀ Create Mode ▶

Input Channel :

7. Enter the number **1 and 4** as a selection of outputs for the given input and push **ENTER** key and then turn back to the **user mode**.
   Note that it is possible to select the output channels for any input as many as wished.
8. Repeat the process from 5 to 7 for other inputs like 2, 3, 4, … , and 8. Push **PREVIEW** and then show the below;

◀ Preview Mode ▶

Input Channel :

Note that the input numeric keys could be activated only one-by-one and the output numeric keys are toggled.
Note that to make any output keys activated (turn in Red) or deactivated shows the change on the LCD window at the same time.
Note that the process of input-out configuring executes at the moment of pushing ENTER key.

3.2 Command Line Operation

Command line interface is accomplished through RS-232C or Ethernet ports. Setting procedures for those ports are referred to SEREAL CONTROL and ETHERNET CONTROL.

The commands are coded in ASCII and HEXA. All descriptions are shown in Table 3.1. A command line constitutes of a string of ASCII or HEXA codes in a series as below;

Start (1 Byte) + **Router ID** (3 Bytes) + **Command** (1 Byte)
+ **Data Length** (3 Bytes)
+ **Output Number** (2 Bytes) + **Input Number** (2 Bytes)
+ **Output Number** (2 Bytes) + **Input Number** (2 Bytes) + …..
+ **End** (1 Byte)

A command line allows executing only one command. Multiple commands require executing multiple strings having each command per a string.

All strings starts with **Start** byte.

To set **Router ID**, refer to 2.1 Setting Router ID of ODM1818 on page 10, to be selectable in a range of 000 to 255, written in 3 bytes.

Data Length represents the number of all bytes afterward it. And it is determined by the number of channels in which involved in the command line. **Input Ch Number** should follow **Output Ch Number**, which is designated in a pair.

A command line closes with **End** byte.

Table 3.1 Descriptions of Command Codes

Command Format		ASCII	HEX	Description	Byte
Start		*	0x2A	Header Code	1
Router ID		Variable	Variable	Router ID Value	3
Command	Create	0	0x30	Connects or disconnects the selected input and output channels	1
	Preview	1	0x31	Previews the connections of all channels	
	Cancel	2	0x32	Cancels the connection of selected channel	
	Upload Data Request	3	0x33	Upload the connections information to controller	
	Rolling	4	0x34	Rotates the input and output connection	
	Upload Router ID	5	0x35	Uploads the Router ID to controller	
	Rolling Stop	6	0x36	Stops the rolling command	
	Check Connection	7	0x37	Uploads the right or wrong of all connections	
	Upload One Channel Data Request	8	0x38	Uploads the connection status of selected channel	
	Baud rate Setting	@	0x40	Changes Baud rate for RS-232	
	Read Output Device EDID	A	0x41	Reads EDID from attached display	
	Default EDID Setting	B	0x42	Restores factory set EDID on EEPROM	
	Read Input EEPROM EDID	C	0x43	Reads EDID from EEPROM	
	EDID Write	D	0x44	Reads EDID from display and writes to EEPROM	
	Edit EDID Write mode	E	0x45	Edits EDID Write mode	
	EDID Data	F	0x46	Send divided data by two	
	Monitoring	G	0x47	Sets the monitoring channel	
Data Length			Variable	-	3
Output Ch			Variable	Selected Output Ch	2
Input Ch			Variable	Selected Input Ch	2
End			0x21	Tail Code	1

As a response of command line input to ODM1818, it returns any of the following ACK signals to the controller shown in Table 3.2 if it is not specified.

Table 3.2 Description of Acknowledge(ACK) Signals

Acronym	Bytes	ASCII Codes	Description
Error	1	0x05	Router received the irregular data packet
RX Complete	1	0x06	Router received the regular data packet
Job Complete	1	0x07	Completed the operation per command
Connection OK	1	0xA0	Connection has been successfully done

After sending command codes, ACK will be returned.
If the command codes are successfully done, 0x06, 0x07 will be returned. But if it is failed, 0x05 will follow it by return. Some command codes have special ACK and it is described under the each example command code below.

The followings illustrate example codes for various applications to be utilized on HyperTerminal for RS-232 and on Telnet for TCP/IP.

CREATE COMMAND

It enables to configure connection of inputs and outputs to be cross-switched as you wish.

Format of command line:
Start (*) + Router ID (3 byte) + *Command (0)* + Data Length (Variable) + Output ch (2 byte) + Input ch(2 byte) + … + *End(!)*

Ex. 1> One (1) channel connection of Output Ch1 and Input Ch1

	Start	Router ID			Command	Data Length			Output ch		Input ch		End
ASCII	*	0	0	0	0	0	0	4	0	1	0	1	!
HEX	2Ah	30h	30h	30h	30h	30h	30h	34h	30h	31h	30h	31h	21h

Ex. 2> One (1) channel disconnection of Output Ch1 by setting “0” on the input channel bytes.

	Start	Router ID			Command	Data Length			Output ch		Input ch		End
ASCII	*	0	0	0	0	0	0	4	0	1	0	0	!
HEX	2Ah	30h	30h	30h	30h	30h	30h	34h	30h	31h	30h	30h	21h

Ex. 3> Two (2) channels connection: Output Ch1 → Input Ch8 & Output Ch 8 → Input Ch1

	Start	Router ID			Command	Data Length			Output ch		Input ch	
ASCII	*	0	0	0	0	0	0	8	0	1	0	8
HEX	2Ah	30h	30h	30h	30h	30h	30h	34h	30h	31h	30h	38h

Output ch	Input ch	End

0	8	0	1	!
30h	38h	30h	31h	21h

Ex. 4> Eighteen (18) channels direct –through connection

	Start	Router ID			Command	Data Length			Output ch		Input ch	
ASCII	*	0	0	0	0	0	7	2	0	1	0	1
HEX	2Ah	30h	30h	30h	30h	30h	33h	32h	30h	31h	30h	38h

Output Ch		Input Ch		…	Output Ch		Input Ch		Output Ch		Input Ch		END
0	2	0	2	...	1	7	1	7	1	8	1	8	!
30h	32h	30h	32h	…	31h	37h	31h	37h	31h	38h	31h	38h	21h

PREVIEW COMMAND

It shows configuration of all input-output match.

Format of Command line:
Start (*) + Router ID (3 byte) + *Command (1)* + *Data Length (000)* + *End (!)*

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	1	0	0	0	!
Hex	2Ah	30h	30h	30h	31h	30h	30h	30h	21h

CANCEL COMMAND

It enables to cancel the configuration of outputs for each input.

Format of Command Line:
Start (*) + Router ID (3 byte) + *Command (2)* + Data Length (variable) + Input ch (2 byte) + *End (!)*

Ex> Input channel 1 disconnection

Byte	Start	Router ID			Command	Data Length			Input Ch		End
ASCII	*	0	0	0	2	0	0	2	0	1	!
Hex	2Ah	30h	30h	30h	32h	30h	30h	32h	30h	31h	21h

UPLOAD DATA REQUEST

It enables to upload the connection data to the controller.
Format of Command Line:
Start (*) + Router ID (3 byte) + *Command (3)* + *Data Length (000)* + *End (!)*

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	3	0	0	0	!
Hex	2Ah	30h	30h	30h	33h	30h	30h	30h	21h

Sending **Upload Data Request** command to router let ODM1818 respond **ACK** signal to controller in a format as follows;
0x06(06h) + Connection DATA + 0x07(07h)

The **Connection Data** represents the connection information of router

1) Connection Data of ODM1818 for a connection of 1-1, 2-2, 3-3 … … 16-16, 17-17, 18-18

Byte	Start	Router ID			Command	Data Length			Output Ch		Input Ch	
ASCII	*	0	0	0	3	0	7	2	0	1	0	1
Hex	2Ah	30h	30h	30h	33h	30h	33h	32h	30h	31h	30h	31h

Output Ch		Input Ch		…	Output Ch		Input Ch		Output Ch		Input Ch		END
0	2	0	2	.....	1	7	1	7	1	8	1	8	!
30h	32h	30h	32h	……	31h	37h	31h	37h	31h	38h	31h	38h	21h

ROLLING COMMAND

It enables to rotate the input at fixed output. This function is useful to check the connection status of all inputs and outputs by changing them orderly.

Format of Command Line:
Start (*) + Router ID (3 byte) + *Command (4)* + Data Length (Variable) + Output ch (2 byte) + Input ch (2 byte) + … + *End (!)*

Ex> To rotate three (3) inputs 1, 2, and 3 on three (3) outputs 1,2, and 3.
1) Output Ch1 → Input Ch1, Output Ch2 → Input Ch2, Output Ch3 → Input Ch3

Byte	Start	Router ID			Command	Data Length			Output Ch		Input Ch	
ASCII	*	0	0	0	4	0	1	2	0	1	0	1
Hex	2Ah	30h	30h	30h	34h	30h	31h	32h	30h	31h	30h	31h

Output Ch		Input Ch		Output Ch		Input Ch		End
0	2	0	2	0	3	0	3	!
30h	32h	30h	32h	30h	33h	30h	33h	21h

2) Output Ch1 → Input Ch2, Output Ch2 → Input Ch3, Output Ch3 → Input Ch1

Byte	Start	Router ID			Command	Data Length			Output Ch		Input Ch	
ASCII	*	0	0	0	4	0	1	2	0	1	0	2
Hex	2Ah	30h	30h	30h	34h	30h	31h	32h	30h	31h	30h	32h

Output Ch		Input Ch		Output Ch		Input Ch		End
0	2	0	3	0	3	0	1	!
30h	32h	30h	33h	30h	33h	30h	31h	21h

3) Output Ch1 → Input Ch3, Output Ch2 → Input Ch1, Output Ch3 => Input Ch2

Byte	Start	Router ID			Command	Data Length			Output Ch		Input Ch	
ASCII	*	0	0	0	4	0	1	2	0	1	0	3
Hex	2Ah	30h	30h	30h	34h	30h	31h	32h	30h	31h	30h	33h

Output Ch		Input Ch		Output Ch		Input Ch		End
0	2	0	1	0	3	0	2	!
30h	32h	30h	31h	30h	33h	30h	32h	21h

UPLOAD ROUTER ID

It enables to upload Router ID to controllers or PC.

Format of Command Line:

Start (*) + Router ID (3 byte) + *Command (5)* + *Data Length (000)* + *End (!)*

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	5	0	0	0	!
Hex	2Ah	30h	30h	30h	35h	30h	30h	30h	21h

If the Router ID is 015, you will receive ACK signal as follow.

Byte	Start	Router ID			Command	End
ASCII	*	0	1	5	5	!
Hex	2Ah	30h	31h	35h	35h	21h

ROLLING STOP

It Stops the Rolling command.

Format of Command Line:
Start (*) + Router ID (3 byte) + *Command (6)* + *Data Length (000)* + *End (!)*

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	6	0	0	0	!
Hex	2Ah	30h	30h	30h	36h	30h	30h	30h	21h

CHECK CONNECTION

It enables to check status of all connections.

Format of Command Line:
Start (*) + Router ID (3 byte) + *Command (7)* + *Data Length (000)* + *End (!)*

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	7	0	0	0	!
Hex	2Ah	30h	30h	30h	37h	30h	30h	30h	21h

Sending **Check Connection** command to router let ODM1818 respond **ACK** signal to controller in a format as follows;
Good connection: **0xA0 (A0h)**
Bad connection: **0x05 (05h)**

UPLOAD ONE CHANNEL DATA REQUEST

It enables to upload the connection status of a selected input channel.

Format of Command Line:
Start (*) + Router ID (3 byte) + *Command (8)* + *Data Length (002)* + Output ch (2 byte) + *End (!)*

In case of input 6 → output1 connection

Byte	Start	Router ID			Command	Data Length			Output Ch		End
ASCII	*	0	0	0	8	0	0	2	0	1	!
Hex	2Ah	30h	30h	30h	38h	30h	30h	32h	30h	31h	21h

The ACK signal would be

Byte	Start	Router ID			Command	Data Length			Input Ch		End
ASCII	*	0	0	0	8	0	0	2	0	6	!
Hex	2Ah	30h	30h	30h	38h	30h	30h	32h	30h	36h	21h

READ OUTPUT DEVICE EDID

It enables to read EDID from connected display.

Format of Command Line:

Start (*) + Router ID (3 byte) + *Command (A)* + *Data Length (002)* + Output ch (2 byte) + *End (!)*

Ex.> Read EDID from a Display connected to Output 1

Byte	Start	Router ID			Command	Data Length			Output ch		End
ASCII	*	0	0	0	A	0	0	2	0	1	!
Hex	2Ah	30h	30h	30h	41h	30h	30h	32h	30h	31h	21h

The ACK signal would be

Byte	Start	ID			Command	Data Length			Output Ch		EDID (256Byte)	End
ASCII	*	0	0	0	A	2	5	8	0	1	…	!
Hex	2Ah	30h	30h	30h	41h	32h	35h	38h	30h	31h	00h…xxh	21h

EDID (256Byte) contains output display 1 EDID information.

READ INPUT EEPROM EDID

It enables to read EDID stored on EEPROM of an input.

Format of Command Line:

Start (*) + Router ID (3 byte) + *Command (C)* + *Data Length (002)* + Input EEPROM (2 byte) + *End (!)*

Ex.> Read EDID stored on EEPROM of Input 2

Byte	Start	Router ID			Command	Data Length			Input EEPROM		End
ASCII	*	0	0	0	C	0	0	2	0	2	!
Hex	2Ah	30h	30h	30h	43h	30h	30h	30h	30h	32h	21h

The ACK signal would be

Byte	Start	Router ID			Command	Data Length			Input EEPROM		EDID (256Byte)	End
ASCII	*	0	0	0	C	2	5	8	0	2	…	!
Hex	2Ah	30h	30h	30h	43h	32h	35h	38h	30h	31h	00h…xxh	21h

EDID (256Byte) contains EDID information which was in EEPROM 2.

EDID WRITE

It enables to read EDIDs from connected displays and write them to each EEPROM.

Format of Command Line:

Start (*) + Router ID (3 byte) + *Command (D)* + Data Length (Variable) + EEPROM 1 (2 byte) + EEPROM 2 (2 byte) + … + *End (!)*

Variable in Data Length is determined by multiplying 2 bytes to the maximum number of input channels. In case of ODM1818, it is 16 bytes, multiplying 2 bytes to 8 inputs.
The 2 bytes in EEPROM # represents the output number connected to a targeted display, the EDID of which would be stored to the EEPROM #. For example, 03 in EEPROM 2 means putting the EDID of output 3 display into EEPROM 2. The value, 00 in EEPROM # means no updating on EEPROM.

Ex.> Sets (Output 1 display→ INPUT1 EEPROM, Output 3 display → INPUT 2 EEPROM)

Byte	Start	Router ID			Command	Data Length			EEPROM 1		EEPROM 2	
ASCII	*	0	0	0	D	0	3	6	0	1	0	3
Hex	2Ah	30h	30h	30h	44h	30h	31h	36h	30h	31h	30h	33h

EEPROM 3		……..		EEPROM 18		END
0	0	…	…	0	0	!
30h	30h	…	…	30h	30h	21h

DEFAULT EDID SETTING

It restores factory set EDID on EEPROM.

Format of Command Line:

Start (*) + Router ID (3 byte) + *Command (B)* + *Data Length (000)* + *End (!)*

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	B	0	0	0	!
Hex	2Ah	30h	30h	30h	42h	30h	30h	30h	21h

BAUD RATE SETTING
It enables to change baud rate for RS-232C.

Format of Command Line:

Start (*) + Router ID (3 byte) + *Command (@)* + *Data Length (002)* + Baud Rate (variable) + *End (!)*

The default baud rate is 19,200, which is selectable as the following options;

01 for 19,200bps
02 for 38,400bps

03 for 57,600bps
04 for 115,200bp

Ex.> Sets the baud rate by 38,400bps.

Byte	Start	ID			Command	Data Length			Baud Rate		End
ASCII	*	0	0	0	@	0	0	2	0	2	!
Hex	2Ah	30h	30h	30h	40h	30h	30h	30h	30h	31h	21h

ACK would be same as command code for BAUD RATE SETTING

Byte	Start	ID			Command	Data Length			Baud Rate		End
ASCII	*	0	0	0	@	0	0	2	0	2	!
Hex	2Ah	30h	30h	30h	40h	30h	30h	30h	30h	31h	21h

MONITORING

It sets the monitoring channel.

Format of Command Line:
Start (*) + Router ID (3 byte) + *Command (G)* + *Data Length (002)* + Monitoring Data (2 byte) + *End (!)*

Ex.> Sets Input ch 2 as a Monitoring channel

Byte	Start	ID			Command	Data Length			Monitoring Data		End
ASCII	*	0	0	0	G	0	0	2	0	2	!
Hex	2Ah	30h	30h	30h	47h	30h	30h	32h	30h	32h	21h

3.3 Web Control Panel Operation

The web control panel (WCP) gives a graphic alternative to command line interface. ODM1818 supports to be operated by a standard web browser. Microsoft Explorer is highly recommended to use. Before running the web browser, confirm that the set-up for Ethernet connection is pre-performed as guided in the …. Page13. .
At first, run the web browser and enter the ID address into the URL address line.

For example, if the IP address sets to the factory setting, 192.168.000.088, then type the following entry into the URL address line.

http://192.168.000.088

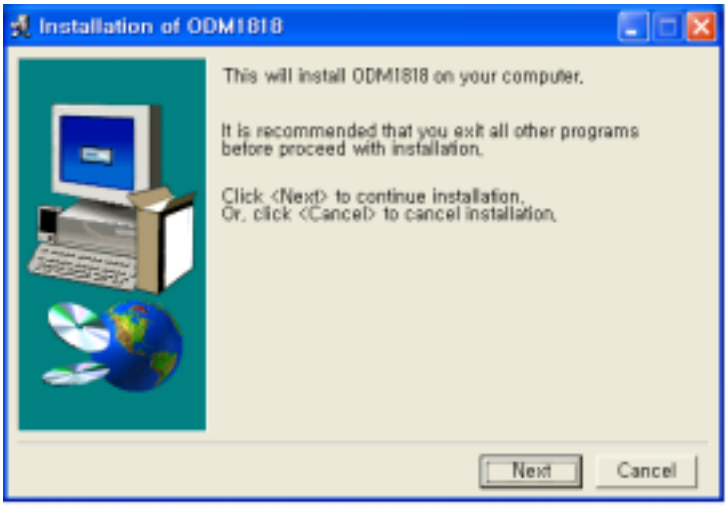
3.4 Proprietary PC Software Operation

3.4.1 Installation of PC Program Application

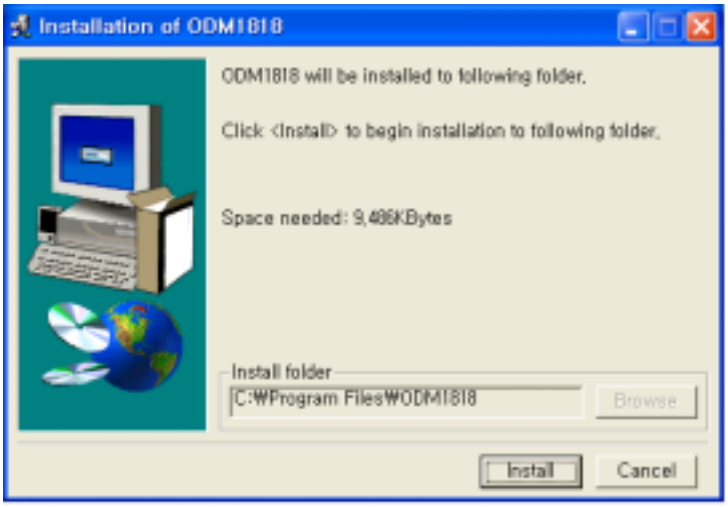
Follow the instructions below to install the ODM1818 software into your PC. Insert the ODM1818 software CD into your PC. If the CD does not automatically run, click

Start >Run. Enter X:\ 'ODM1818-install.exe, where X is the letter of your CD drive.

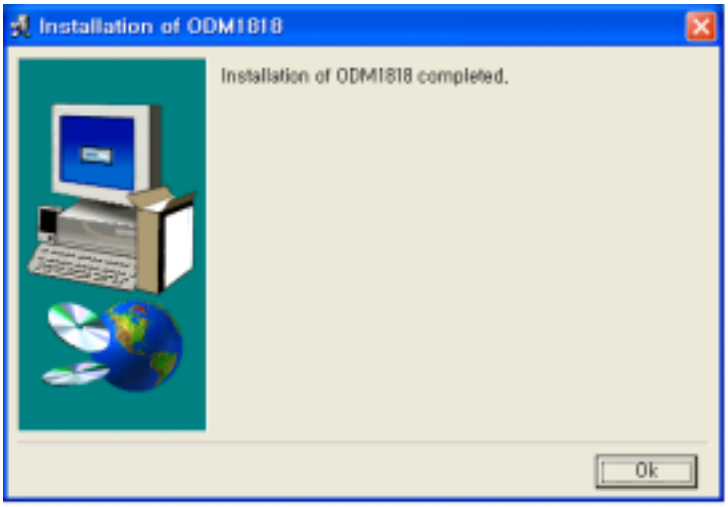
The following screen will open. Then, click NEXT button.


Installation of ODM1818
This will install ODM1818 on your computer.
It is recommended that you exit all other programs before proceed with installation.
Click <Next> to continue installation.
Or, click <Cancel> to cancel installation.
Next
Cancel

Select the destination directory path. The default destination directory is C:\Program Files\ ODM1818. Click 'Install' button For Software Installation.



To terminate the installation Click the 'Ok' button.



Click the 'Yes' button to update the registry.

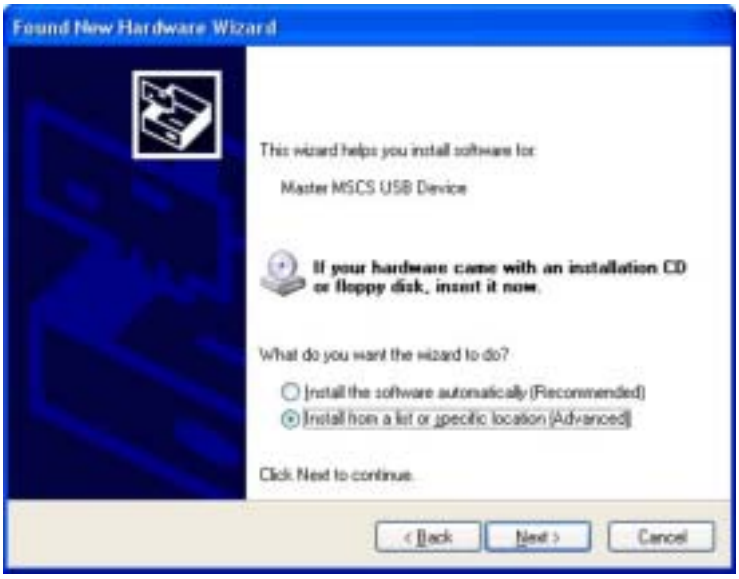
Registry Editor
Are you sure you want to add the information in C:\Program Files\ODM1818\odm1818.reg to the registry?
Yes
No

Click the 'Ok' button.

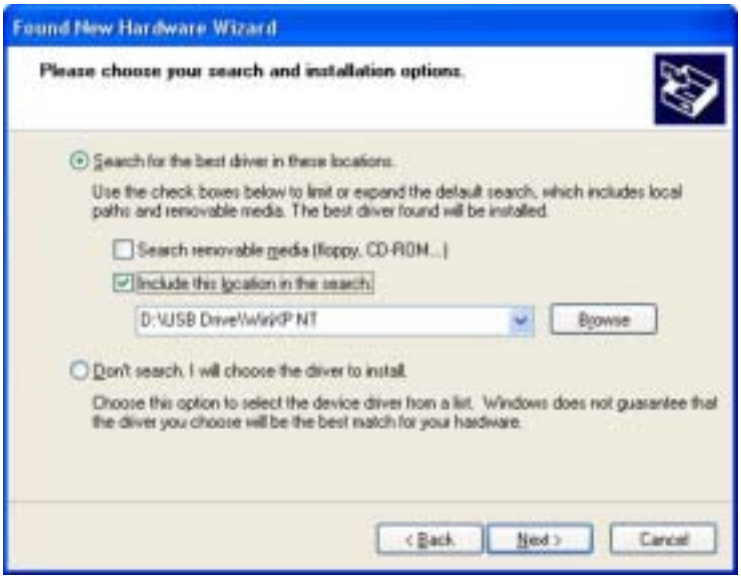
Registry Editor
Information in C:\Program Files\ODM1818\odm1818.reg has been successfully entered into the registry.
OK

3.4.2 Installation of USB Driver

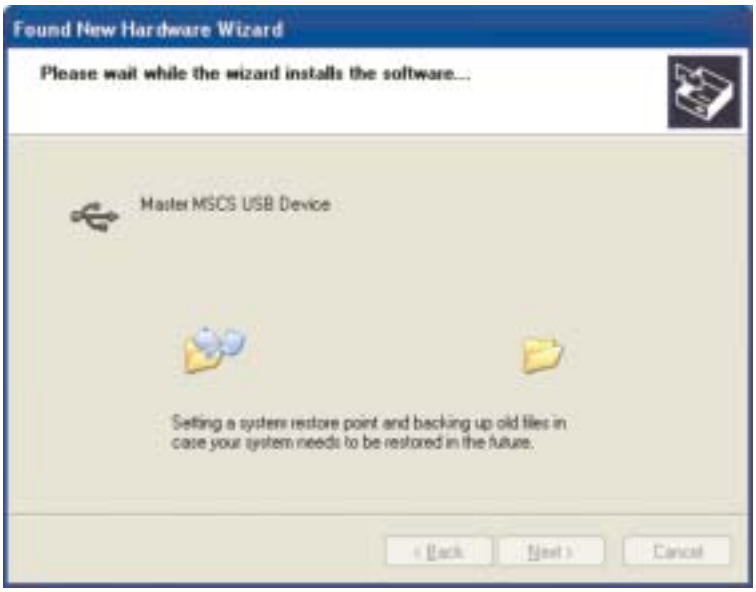
Windows XP
Please turn on the Router Power after connecting PC and the Router over USB cable.
Please push the "NEXT" button after checking the option button as shown below.


Found New Hardware Wizard
This wizard helps you install software for:
Master MSCS USB Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Insert enclosed CD into the CD-ROM and select the searching Location and click the "NEXT" button as shown below.


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
D:\USB Drive\WinXP NT
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

Please click the "Continue Anyway" button.


Found New Hardware Wizard
Please wait while the wizard installs the software...
Master MSCS USB Device
Setting a system restore point and backing up old files in case your system needs to be restored in the future.
< Back
Next >
Cancel

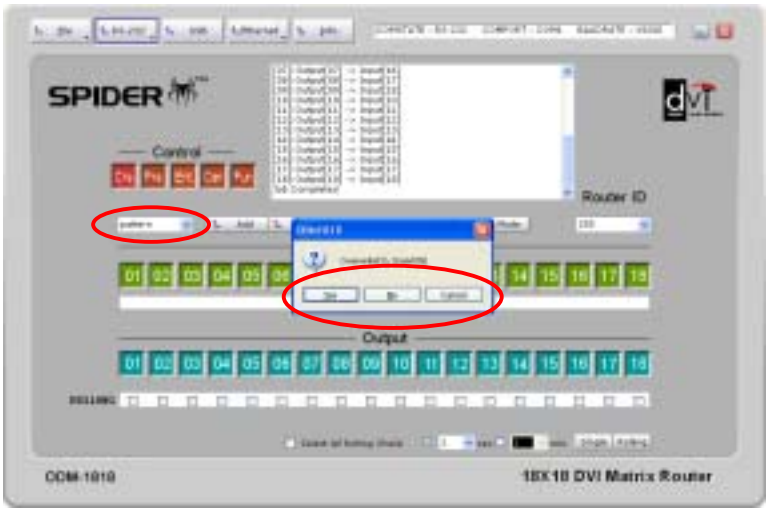
Please complete the installation by clicking the "FINISH" button.

Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Master MSCS USB Device
Click Finish to close the wizard.
< Back
Finish
Cancel

3.4.3 Operation by PC program

1) Initialize the PC program.

- Check the communication cable (RS-232C, LAN or USB) and turn on the router.
- Double click the PC program.
- Set the same Router ID number on the PC program as the DIP switch setting on the rear panel of router.
- Router initializes and verifies the connection state of communication cable.
- If everything is normal, the message 'connection is completed successfully' appears on the Edit-Box, and then it loads up switching-pattern from router and display it on status display area immediately.
- In case of wrong cable connection, COM port or Router ID, the message 'Device Not Found' will be appeared on the status display area. Then, check those again. To check COM port, push right side of 'RS-232C' button and make sure the COM port number and baud rate are set properly. Default baud Rate is19200.
- Now user can create or update the switching-pattern.
- The Message Box asks for Over Write (Y) or Insert (N) of switching-data.



- Press 'Y': Overwrite the old switching-data.
- Press 'N': Create new switching-pattern. Allocate the new pattern name and click "Accept" button.

- After the updating or creating the switching-pattern, "Job Completed" will follow on status display area.

2) Control Buttons

1) Cre (Creat)
Function: It has the same function as the Create-Button on the router front panel. It setups the Input-Output channel connection.

Process: Cre. Button → Input Button → Output Button → Ent. Button

2) Pre (Preview)
Function: It has the same function as the Preview-Button on the router front panel. It checks the current Input-Output connection states.

Process: Pre. Button → Input Button (Single Mode),
Pre. Button → Ent. Button (Auto Mode)

3) Can (Cancel)
Function: It has the same function as the Cancel-Button on the router front panel. It disconnects the Input with Output.

Process:Can. Button → Input Button → Ent. Button

3) File menu

1. Router ID Setting

It controls router temporary by removing hardware router ID number when user forgot router ID number or can not change the dip switch due to far remote location.

2 Download Patten to Device
It downloads current input-output channels pattern to router.

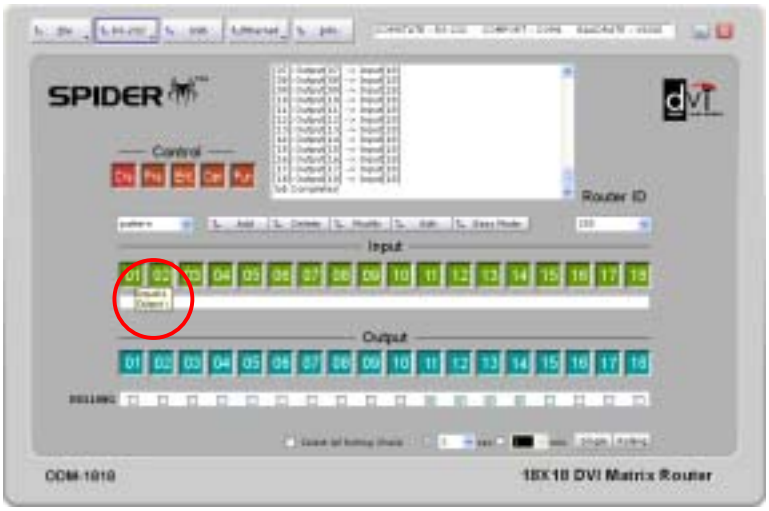
3 Upload Pattern from Device
It uploads current input-output channels pattern to PC program.

4 Exit
It terminates the application program, ODM1818.

4) Edit Pattern

a) Edit: It modifies the current input-output switching pattern.
- Click the edit button.
- The current input and output names and switching pattern will be shown.
- User can assign new input and output names and switching patter separately.
- Click the Save Button.
- Modified switching pattern will be saved.

- By posing the mouse on the input button on PC program as below, user can review switching pattern.



- User can check the switching-pattern database at program folder (c:\program files\ ODM1818).

b) Add
- Set the pattern name as (My_Grace) and than push the Add button on the PC program.

- Once this is done, user can see the new switching-pattern as below.

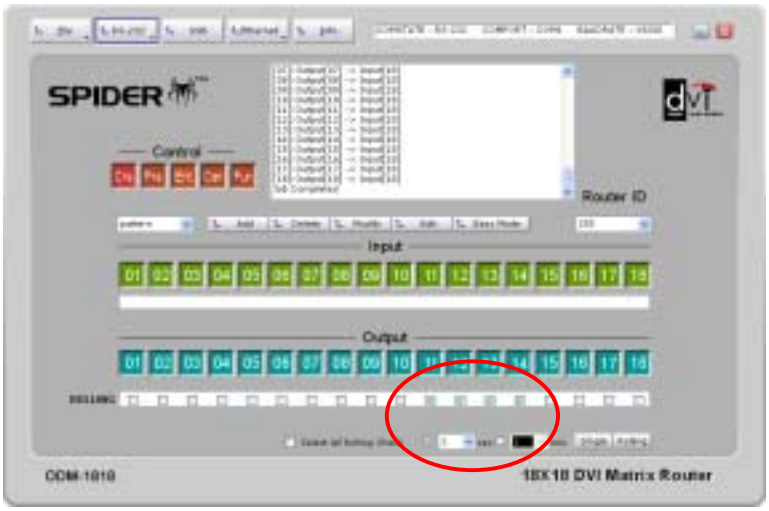
- Click the edit button then user can edit switching-pattern and input-output names.

c) Modify
- Select the switching-pattern, to be modified.
- Write down the new pattern name in the combo box.
- Click the Modify button.
- It is almost same as ‘SAVE AS’ in window program.

d) Delete
- Select the pattern name, to be deleted.
- Click the Delete button
- The selected pattern name will be disappeared in the combo box list.

5) Rolling Function

It makes user rotate input sources at output displays repeatedly at regular intervals. It is useful function to check the all input and output connections.
User can select output channels to be rolled using the Check Box.
If output channel is not connected to any input channel, Check Box would not be checked.
Output channel must be more than 2 channels.



For example, if the current switching-pattern is same as step 1 as below and want to rotate the input channels on output 1, 2, 3, 4, 5. Please check the rolling box 1, 2, 3, 4, 5 and set the interval you want.

Then lowest channel Input LED and connected output channel LED on Router will be turned on. (In this case input 1 and output 1 be tuned on)

Single Rolling

- Push the 'Single' Button.
- The output will be changed repeatedly at specified interval from step 1 to step 6 and be finished automatically.
- Even though the Rolling is on going, if you push the 'Stop' Button, the Rolling will is stopped.
- The output image will be remained on current state.

Unlimited Rolling

- It rotates the input continuously on the output display until the user pushes the 'Stop' Button.
- If you push the "stop" Button, at any time, rolling will be stopped, and it does not affect the pre-saved switching-pattern
- If you want to quit the rolling, please select new pattern.

6) EDID Setting

It provides several EDID handling function

- Store EDID
- Read EDID from output device
- Read EDID from output device and store it in input EEPROM
- EDIT user defined EDID
- Restore default EDID (in all input channel)
- One touch storing (in all input channel)
- Storing EDID by individual selection
- Basic EDID structure: EDID Block 0 [128 bytes]

But, the most useful and important methods are described here. For more specialized handling method, please contact the technical support.

Push the Files Button, and go to EDID setting.
Then select the Write EEPROM Write tab at upper side.

a) Read the OUTPUT DEVICE EDID and save it in selected EEPROM
- Check OUTPUT DEVICE EDID
- Check the EEPROM# and select the OUTPUT # on right side one by one
- Push the write EEPROM button to save

b) Set Default EDID
- By pushing Set Default EDID button all of EEPROM will have factory set EDID.

A. Trouble shooting

Problem	Symptom	Remedy
Power	**No Power LED**	Check the power cord is correctly connected to the ODM1818 and to an AC power source and that the power switch is in the ON position
Output	**No output present**	Check the input output DVI cables are correctly connected to each port of ODM1818 and double check the input output connection configuration you want.
		The display is not capable of the resolution sent to it. Check the compatibility of EDID in the EEPROM and attached displays When a single input is routed to multiple outputs, EDID priority may not yield compatible resolution. So set EDID priority to minimum resolution. EX> Input 1 → Output 1 (UXGA) & Output 2(SXGA) If EEPROM 1 store the display 1 EDID (UXGA), the display 2 (SXGA) will not works due to resolution limit.
		The source has stopped sending a graphic signal. Check that input source status by connecting it to available monitor without the ODM1818.

B. Features

This unit is designated to make cross-switch between the 18 DVI inputs and the 18 DVI outputs in a way of any of 18 inputs to one or multiple outputs. Chassis is hardened enough to be applicable in harsh environments like staging, control rooms and military.

1) Enable to connect the maximum 18 independent displays.
2) Comply with DVI-HDCP standard.
3) Each output port can be used as a Signal-Distributor.
4) Support Windows PLUG & PLAY function.
5) Offer various control interfaces like Front-Key input, RS232C, USB and TCP/IP (UDP) communication.
6) Easy program download using ISP Interface.

7) Fulfill real-time display of running status on 20x4 LCD and with illuminated LED type keys.
8) Be rack-mountable with solid 19 inch standard RACK TYPE CASE (3U).
9) Support real-time Hot_Plug Detection and program each EDID to connected DVI sources as per user's specification. (EDID programming option)
9) Offer 3 options to set EDID to connected DVI sources; (1) direct reading as per in-out switching configuration, (2) execute pre-one-time connection of a target display to each source, and (3) program EDID to the input on the PC software in the shipping group.

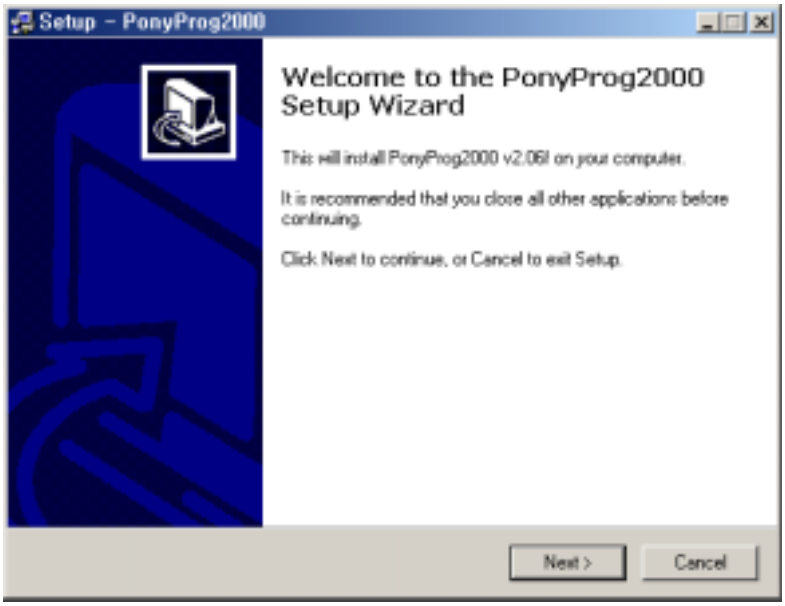
C. Specification

1) Input & Output Video Signals Type: TMDS (Transient Minimized Differential Signal)
2) DVI Signal Bandwidth: Maximum 1.65Gbps
3) Resolution: VGA (640x480) ~ WUXGA (1920x1200), 480~1080i and 1080p
4) RS232 baud rates: 19,200bps ~115,200bps
5) LAN Port: 10/100 base
6) USB: Hi-speed USB 2.0
7) AC/DC Power Supply: 110~240V/1.5A, 50~60Hz, DC12V/5A
8) Size: 484 x 240 x 264mm (W x D x H) ***For 18X18**
9) Weight: 11.5Kg ***For 18X18**

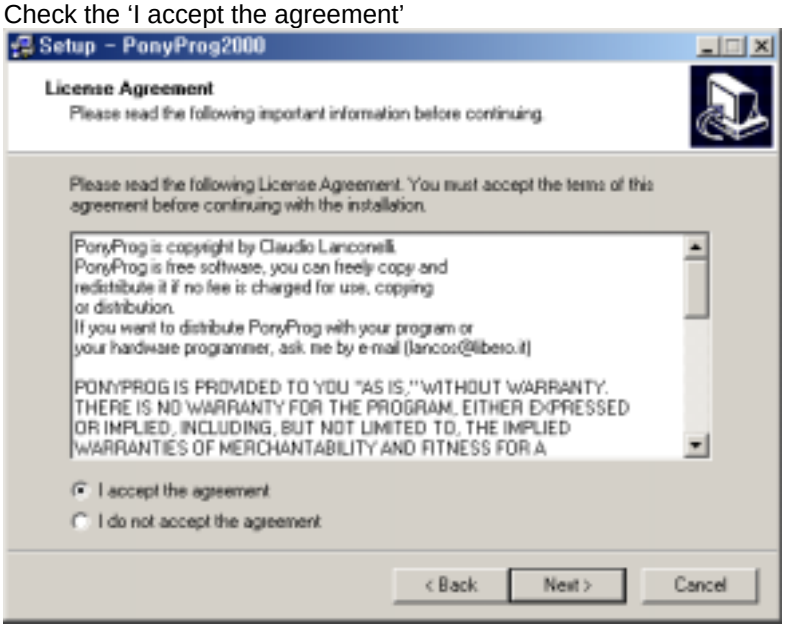
D. Firmware downloading

1. Installation of the Ponyprog2000

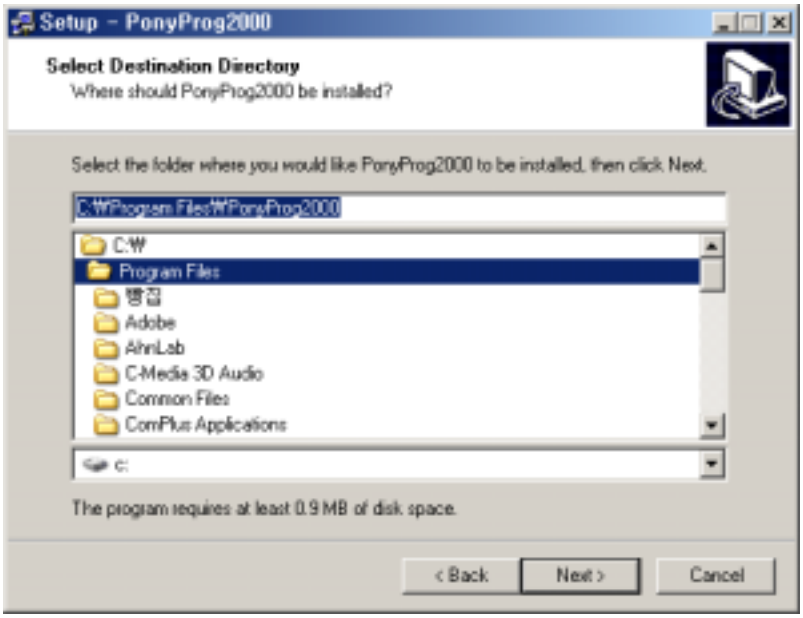
Follow the instructions below to install the PonyProg2000 software into your PC. Insert the ODM1818 software CD into your PC. Go to Downloader directory in CD and execute setup.exe. The following screen will open. Then, click NEXT button.


Setup - PonyProg2000
Welcome to the PonyProg2000 Setup Wizard
This will install PonyProg2000 v2.06I on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

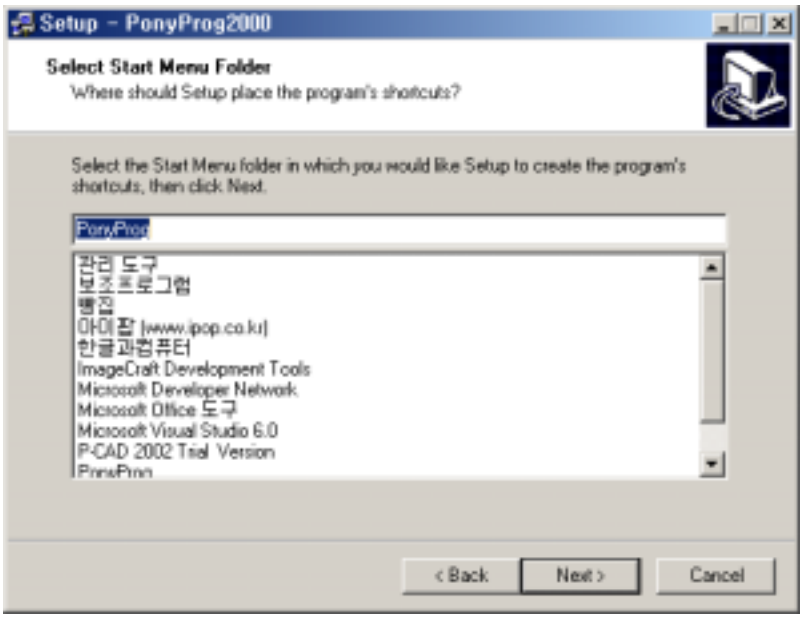
Check the 'I accept the agreement'


Setup - PonyProg2000
License Agreement
Please read the following important information before continuing.
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.
PonyProg is copyright by Claudio Lanconelli
PonyProg is free software, you can freely copy and redistribute it if no fee is charged for use, copying or distribution.
If you want to distribute PonyProg with your program or your hardware programmer, ask me by e-mail (lanconi@libero.it)
PONYPROG IS PROVIDED TO YOU "AS IS," WITHOUT WARRANTY. THERE IS NO WARRANTY FOR THE PROGRAM, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
I accept the agreement
I do not accept the agreement
< Back
Next >
Cancel

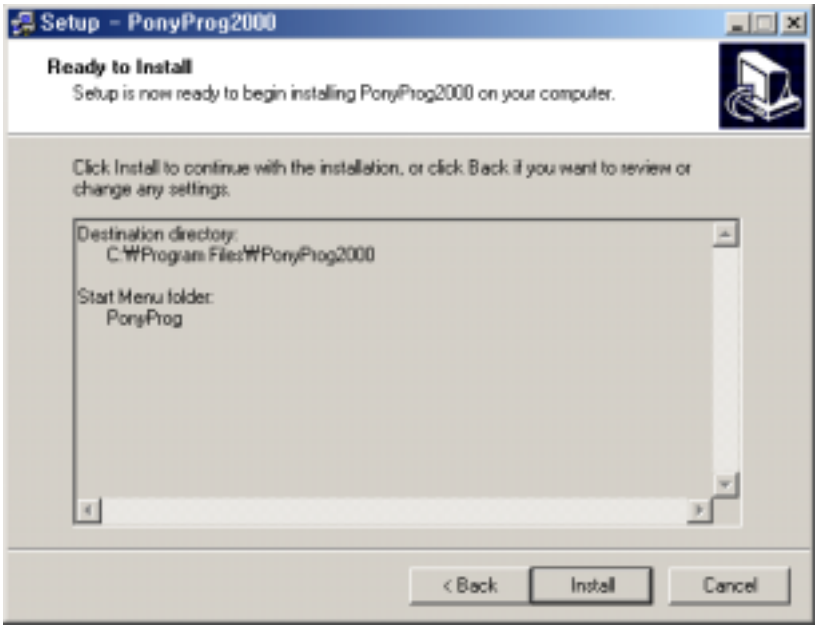
Define destination directory and click ‘Next’ button.



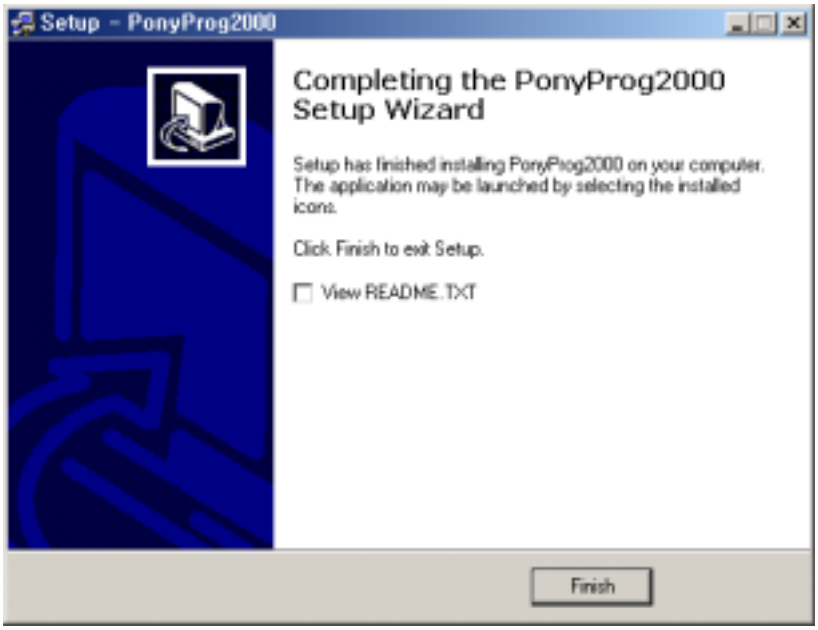
Select Start Menu Folder as below.



Click ‘Install’ button to install the software in your PC

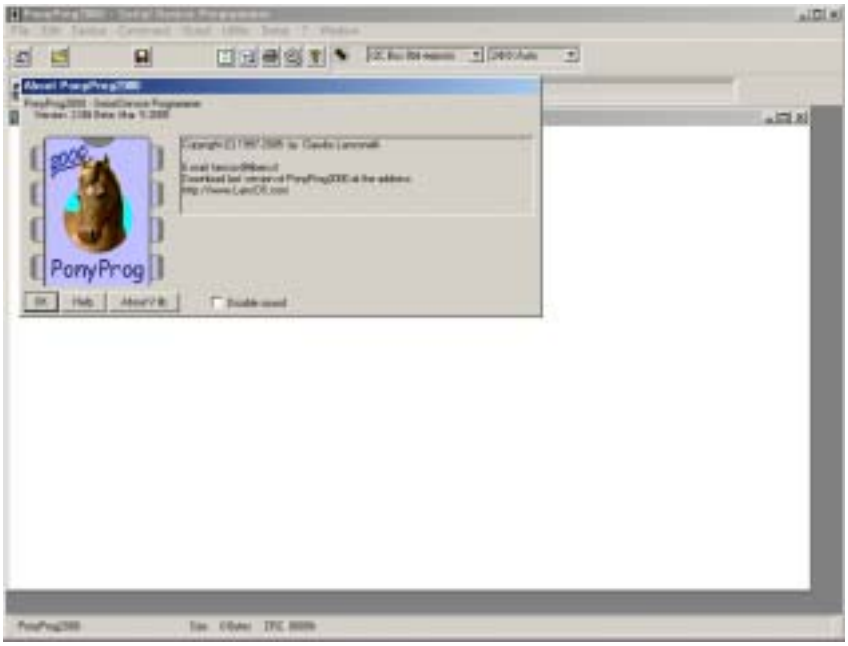

Setup - PonyProg2000
Ready to Install
Setup is now ready to begin installing PonyProg2000 on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination directory:
C:\Program Files\PonyProg2000
Start Menu folder:
PonyProg
< Back
Install
Cancel

Click ‘Finish’ then PonyProg2000 will be installed in your PC successfully.

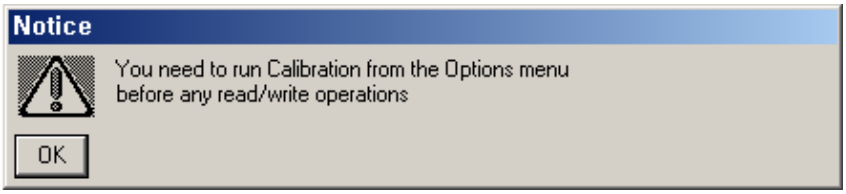

Setup - PonyProg2000
Completing the PonyProg2000 Setup Wizard
Setup has finished installing PonyProg2000 on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
View README.TXT
Finish

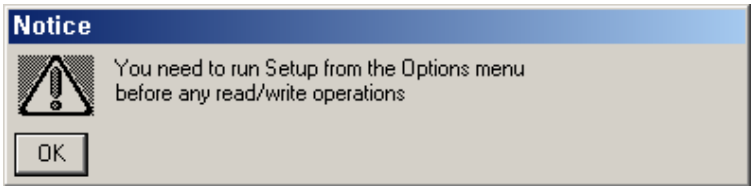
2. Download of Firmware

Turn on Router and connect Router (to Download port) and PC(to Parallel port) over firmware download cable.
Execute PonyProg2000.exe and click ‘OK’.

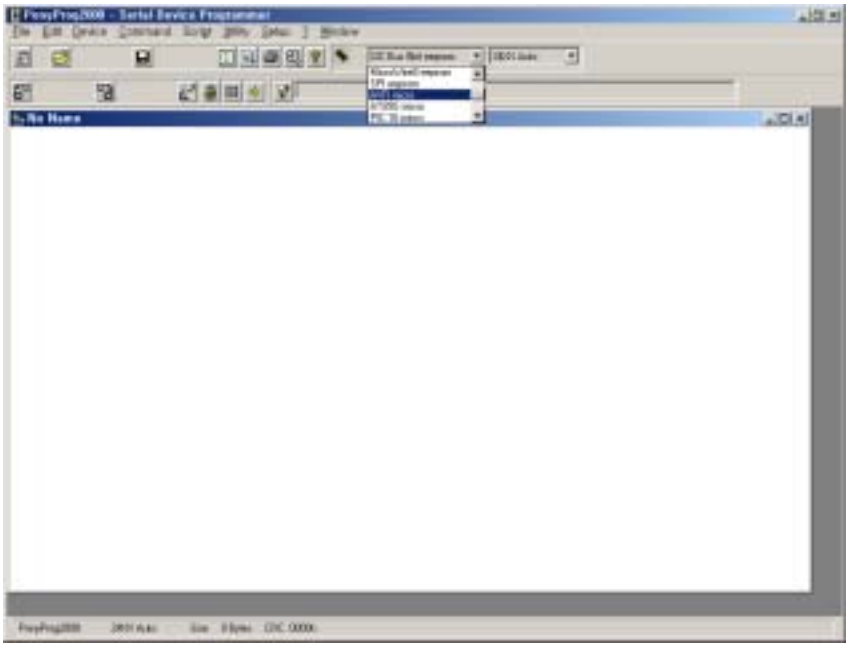


Click ‘OK’ button for calibration.

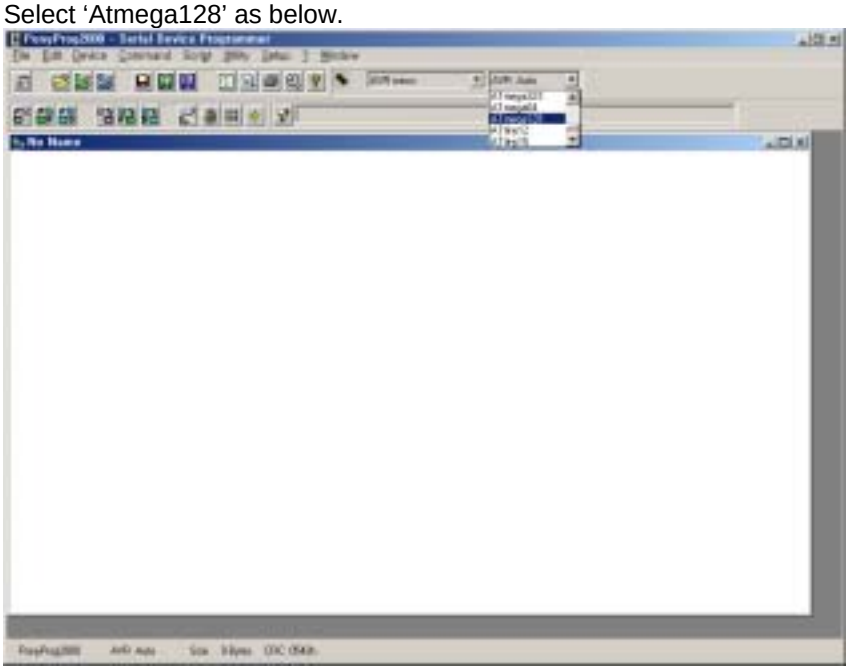




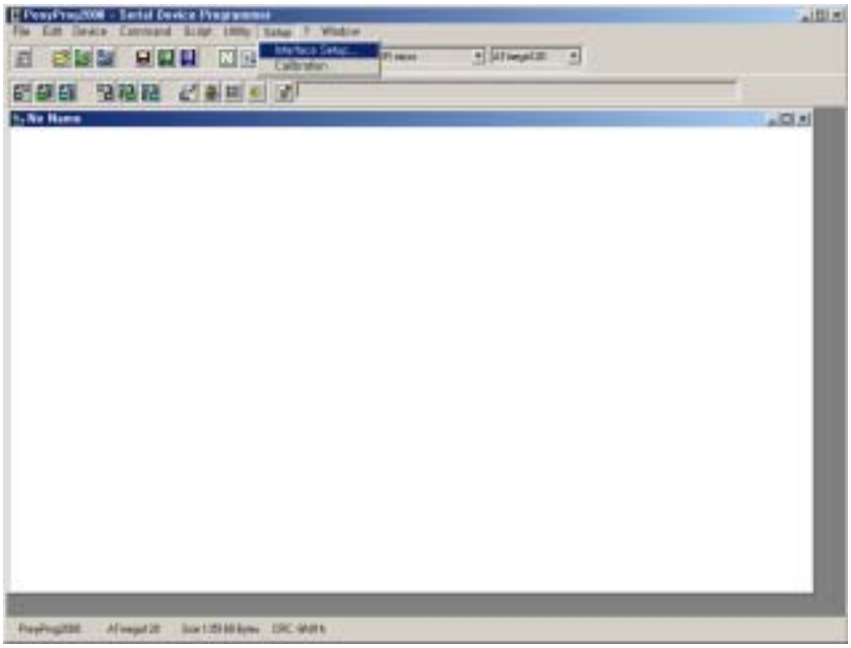
Select ‘AVR micro’ as below.



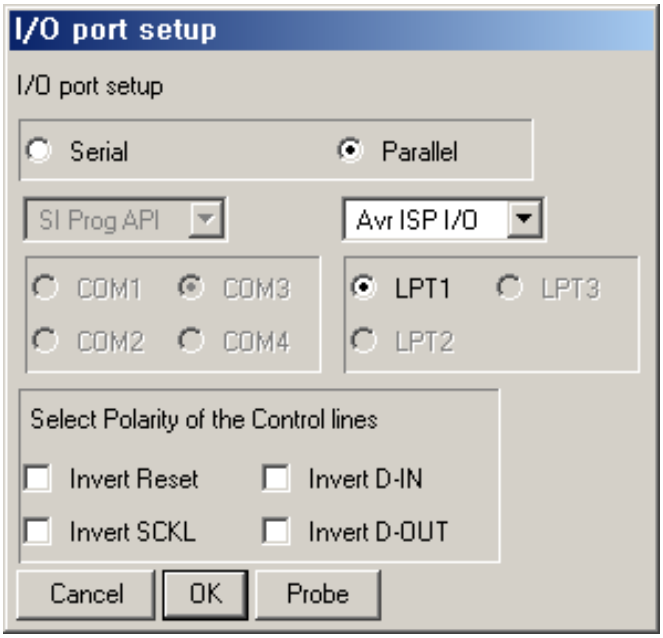
Select ‘Atmega128’ as below.



Select ‘Interface Setup’ in Setup menu as below.

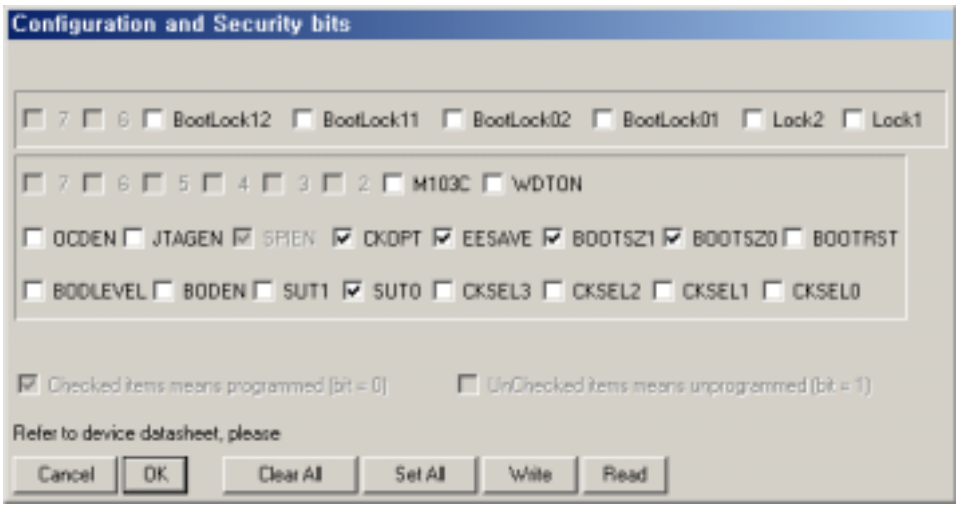


Set I/O port as below and click ‘OK’ button

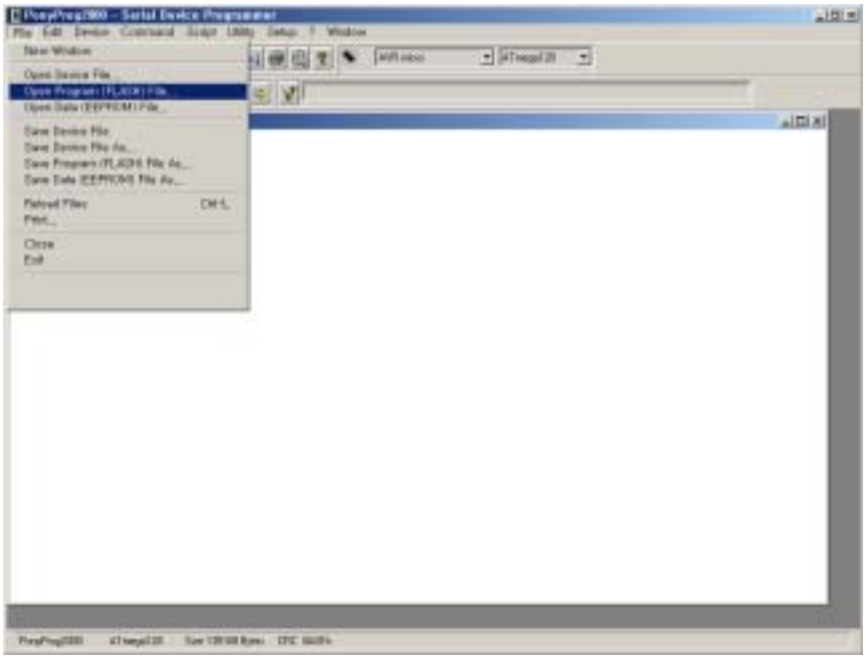


Select ‘Security and Configuration Bits’ in Command menu.

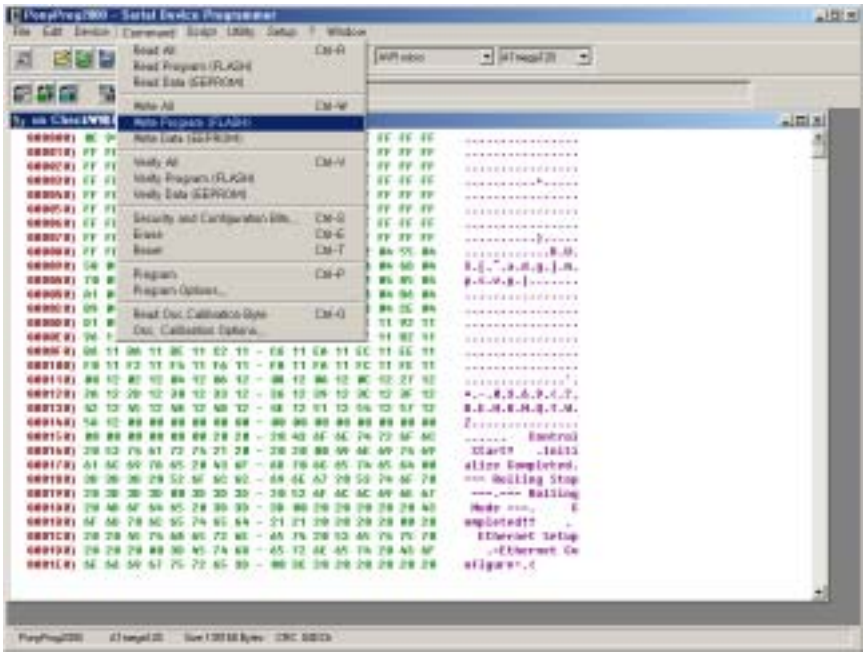
Click the ‘Read’ button and make sure option is set as below.
If the option is not same as below click the ‘Clear All’ to reset and check it again.
Then click ‘Write’ button and click ‘Read’ button and check the option is same and below again.


Configuration and Security bits
7 6 BootLock12 BootLock11 BootLock02 BootLock01 Lock2 Lock1
7 6 5 4 3 2 M103C WDTON
OCDEN JTAGEN SPIEN CKOPT EESAVE BOOTSZ1 BOOTSZ0 BOOTRST
BODLEVEL BODEN SUT1 SUT0 CKSEL3 CKSEL2 CKSEL1 CKSEL0
Checked items means programmed (bit = 0)
UnChecked items means unprogrammed (bit = 1)
Refer to device datasheet, please
Cancel
OK
Clear All
Set All
Write
Read

Select ‘Open Program (FLASH) File’ in File menu and select new firmware to download.

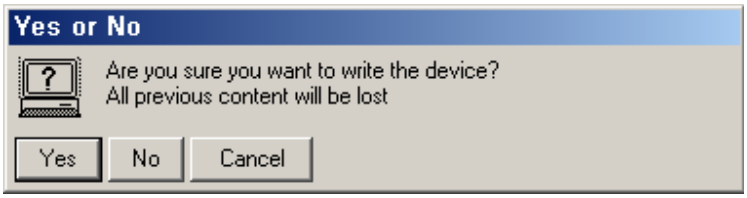


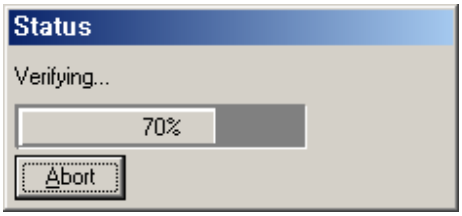
Select ‘Write Program(FLASH)’ in Command menu.



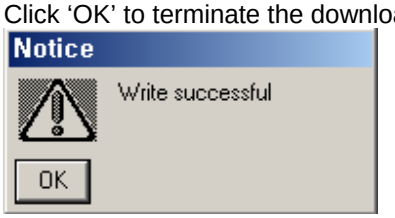
Click ‘OK’ button then it starts downloading and verifying continuously.

.





Click ‘OK’ to terminate the downloadin.



Now the Router is operated under the new firmware.

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